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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/954,872	09/18/2001	Melissa J. Pike	04899-041001	8475
959	7590	08/24/2004	EXAMINER	
LAHIVE & COCKFIELD, LLP.			HOANG, PHUONG N	
28 STATE STREET			ART UNIT	
BOSTON, MA 02109			PAPER NUMBER	
			2126	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/954,872	Applicant(s) PIKE ET AL.	
	Examiner Phuong N. Hoang	Art Unit 2126	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/6/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 – 55 are pending for examination.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description: 44. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

1. Claims 1 – 53 are rejected under 35 U.S.C. 101 because they are directed to non-statutory subject matter.

3. Claims 1 - 53 are directed to method steps which can be practiced mentally in conjunction with pen and paper, therefore they are directed to non-statutory subject matter. Specifically, as claimed, it is uncertain what performs each of the claimed method steps. Moreover, each of the claimed steps, inter alia, establishing, providing can be practiced mentally in conjunctions with pen and paper. The claimed steps do not define a machine or computer implemented process [see MPEP 2106]. Therefore, the claimed invention is directed to non-statutory subject matter. (The examiner suggests applicant to change "method" to "computer implemented method" in the preamble to overcome the outstanding 35 U.S.C. 101 rejection).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claims 1 – 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.**

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6. As to claim 1, applicants claimed “establishing a first communication channel linking a command interpreter and a first control instrument in response to the first creation command independent of an interface bus standard type and an interface hardware driver type”.

Examiner see that the summary in the specification (page 1) discloses “establishing a first communication channel linking a command interpreter and a first control instrument in response to the first creation command independent of an interface bus standard type OR an interface hardware driver type”. “And” and “or” has totally different meaning.

7. Claims 2 – 26 are rejected for the same reason as claim 1 above.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1 - 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. As to claim 1, at lines 4 – 6, applicant claimed “establishing a first communication channel linking a command interpreter and a first control instrument in response to the first creation command independent of an interface bus standard type and an interface hardware driver type”. It is not clearly understand what the phrase “in response to the

first creation command independent of an interface bus standard type and an interface hardware driver type" means (i.e., it is the establishing the linking step or the receiving command step independent from an interface bus and an interface hardware driver type). For examining purpose, examiner treats the establishing step is independent from an interface bus and an interface hardware driver type.

11. Claims 2 – 26 are rejected for the same reason as claim 1 above.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. **Claims 1 – 9, 11 – 12, 14 – 20, 22 - 35, 40 – 46, and 48 - 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brumley, US patent no. 5,926,775 in view of Mondrik, US patent no. 5,627,998.**

14. **As to claim 1, Brumley teaches a method comprising the steps of:**
receiving a first creation command (receives the first of calls, col. 3 lines 6 – 10);

establishing a first communication channel (channel, fig. 7 and col. 6 lines 11 – 35) linking a command interpreter (interpreter, fig. 7) and a first device (first DAQ device of the DAQ device family, fig. 7 and col. 1, 3, 4 lines 10 – 25) response the first creation command independent of an interface bus standard type (the establishing or receiving command step is independent from VXI, GPIB, col. 1 lines 40 – 45 and col. 3 lines 5 – 10 and lines 55 - 65) and an interface hardware driver (device interface or driver level, col. 1 lines 45 – 50 and col. 4 lines 10 – 25) type

providing a common communication interface (DAQ driver level software provides a high-level interface to the operation of the DAQ device, col. 1 lines 60 – 65 and col. 3 lines 6 - 20) communicating with first device.

Brumley does not explicitly teach the DAQ device is a control instrument. However, Brumley teaches the hardware interface comprising VXI (VME extension for instruments, GPIB, col. 1 lines 35 – 42).

Mondrik teaches the DAQ device is an instrument controlled by a user application (instrument, col. 1 lines 55 – 65 and col. 2 lines 15 lines 40 and col. col. 11 lines 65 – col. 12 lines 15).

It would have been obvious to one of ordinary skill in the art at the time the invention to combine the teaching of Brumley and Mondrik's system because Mondrik's instrument is also a hardware device including similar hardware interfaces and running on the same environment.

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15. **As to claim 2**, Brumley teaches the step of wherein creation command comes from a user interface (user interface, col. 3 lines 6 – 10 and col. 4 lines 20 - 25).

16. **As to claim 3**, Brumley teaches the step of establishing second communication channel (channel, fig. 7) linking the command interpreter and a second control instrument (second of DAQ devices, col. 4 lines 10 – 15 and col. 6 lines 20 – 30) response a second creation command from the user interface.

17. **As to claims 4 and 5**, Brumely teaches the step of wherein the first communication channel established through a first communication interface (VXI, GPIB, col. 1 lines 40 – 45) of the control instrument and the second communication channel is established through a second communication interface of the second control instrument, the first communication interface being of first type (VXI, col. 1 lines 40 – 45) and the second communication interface being of second type (GPIB, col. 1 lines 40 – 45).

18. **As to claim 6**, Mondrik teaches the Virtual Instrumentation Software Architecture (VISA, abstract).

19. **As to claim 7**, Brumley teaches the steps of wherein
the first control instrument having a communication interface is selected from a group of instrument interfaces (each family of DAQ devices, such as DAQ interface boards, col. 4 lines 10 – 15) having a first driver (each device having a driver

communication over the bus, col. 1 lines 45 – col. 2 lines 2) that includes communication interface; and,

the second control communication interface is selected from a group of instrument interfaces (each family of DAQ devices, such as DAQ interface boards, col. 4 lines 10 – 15) having a second driver that includes the second type of communication interface (each device having a driver communication over the bus, col. 1 lines 45 – col. 2 lines 2).

20. **As to claim 8**, Brumley teaches the steps of

establishing the first communication channel with the response to first instantiation command according to a first syntax (type of call, col. 15 lines 20 – 40 and col. 3 lines 55 - 60);

establishing the second communication channel second control instrument in response second instantiation command according to the first syntax (type of call, col. 15 lines 20 – 40 and col. 3 lines 55 - 60).

21. **As to claim 9**, Brumley teaches the steps comprising of:

creating a first instrument object (first device object for first device of the family device, col. 3 lines 42 – 52) associated with the communication channel in response to an interpreter command (interpreter receives the call Generate calls, col. 3 lines 55 – 65) wherein the first instrument object has properties (by definition of object);

creating a second instrument object (second device object for second device of the family device, col. 3 lines 42 – 52) associated with the second communication channel in response to an interpreter command, wherein the second instrument object has properties;

Mondrik teaches the step of

creating an object array (array, abstract and col. 1 lines 55 – 65, col. 3 lines 32 – 40) including first instrument object and the second instrument object as elements of the object array in response to an array creation command interpreter wherein the object array comprises properties; and

changing the properties the first communication channel and the second communication channel in response to the interpreter command change the properties of the object array (one of ordinary skills in the art can recognize that the properties need to be changed to be suitable with the array size).

22. **As to claim 11**, Brumley teaches the step of wherein the first instrument object has a read function, the function comprising the step of receiving data from the first communication channel response interpreter command execute read function the first instrument object (read function, col. 12 lines 5 – 14).

23. **As to claim 12**, Brumley teaches the step of wherein the first instrument

object has a write function (write, col. 12 lines 5 – 14), the transmitting data through the first communication channel in response interpreter command to execute the instrument object.

24. **As to claim 14**, Brumley teaches the step comprising of detecting an available interface for the first communication channel with the first control instrument, wherein the first communication channel is established on a detected interface (col. 6 lines 10 – 35).

25. **As to claim 15**, Brumley modified by Mondrik teaches the step of wherein the common communication interface includes a command interpreter (Brumley; the DAQ driver level includes one or more interpreters, col. 3 lines 6 – 20) having instrument engine operating in array-based environment (Mondrik; array, abstract and col. 1 lines 55 – 65, col. 3 lines 32 – 40).

26. **As to claim 16**, Brumley teaches the step comprising of generating timer events and event handling operations (timer....in response to events, col. 12 lines 45 – 48).

27. **As to claims 17 - 19**, Brumley teaches the step of restoring an object to the array-based environment, and buffering data between the interface hardware and the user interface (buffer object is a software object created to make data movement from user own use, col. 20 lines 5 – 35) and creating record files data transfer.

28. **As to claim 20**, Brumley teaches the step of comprising validating parameters (validating incoming function parameters, col. 15 lines 20 – 25).

29. **As to claim 22**, Brumley teaches the step comprising of configuring object properties (it is definition of object).

30. **As to claim 23**, Brumley teaches the step comprising of translating error codes (constructorError, col. 23 lines 10 – 15).

31. **As to claim 24**, Brumley and Mondrik do not teach the step comprising of data casting.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the data type to be type casting to be suitable with the data type of the application.

32. **As to claim 25**, Brumley teaches the steps of wherein the communication channel established by linking a compilation means (compiles, col. 23 lines 30 – 38) and the response to the first creation command independent an interface bus standard type and interface hardware driver type.

33. **As to claim 26**, Mondrik teaches the step of wherein the compilation means compiles user created program a stand-alone executable file (stand-alone system, col. 2 lines 15 – 30) when a command for compiling the program is received.

34. **As to claim 27**, Brumley teaches a system comprising the steps of:

user interface adapted to receive a first creation command (user interface, col. 3 lines 6 – 10 and col. 4 lines 20 - 25);

a command interpreter adapted to receive the first creation command (interpreter receives calls, fig. 7 and col. 3 lines 6 – 15);

a first device (first device of DAQ device family, col. 4 lines 10 – 25);

a first communication channel (channel, fig. 7 and col. 6 lines 11 – 35) linking the command interpreter and the first control instrument; and

a common communication interface for communicating with the first control instrument (DAQ driver level software provides a high-level interface to the operation of the DAQ device, col. 1 lines 60 – 65 and col. 3 lines 6 - 20).

Brumley does not explicitly teach the DAQ device is a control instrument.

However, Brumley teaches the hardware interface comprising VXI (VME extension for instruments, GPIB, col. 1 lines 35 – 42).

Mondrik teaches the DAQ device is an instrument controlled by a user application (instrument, col. 1 lines 55 – 65 and col. 2 lines 15 lines 40 and col. col. 11 lines 65 – col. 12 lines 15).

It would have been obvious to one of ordinary skill in the art at the time the invention to combine the teaching of Brumley and Mondrik's system because Mondrik's instrument is also a hardware device and they have same structure running on the same environment.

35. **As to claims 28 – 30**, see rejection for claims 3 – 5 above.

36. **As to claim 31**, see rejection for claim 6 above.

37. **As to claims 32 – 34**, see rejection for claims 7 – 8 above.

38. **As to claim 35**, see rejection for claim 9 above.

39. **As to claim 40**, see rejection for claim 14 above.

40. **As to claims 41 - 46**, see rejection for claims 15 - 20 above.

41. **As to claims 48 - 52**, see rejection for claims 22 - 26 above.

42. **As to claim 53**, Brumely teaches the steps comprising of:

instantiating an device object in response to an instantiating function call
(instantiates a DAQ device software object corresponding to a respective DAQ device
which is executable in response to a call, col. 10 lines 15 – 20 and col. 3 lines 7 – 10);

establishing a communication channel (each channel is associated with a DAQ
device, fig. 7 and col. 6 lines 11 – 35) linking a control instrument to the instrument
object in response to a function call;

writing and reading data between the control instrument and the instrument
object in response to write and read function calls (read/write, col. 11 line 62 – col. 12
line 40 and col. 10 lines 15 – 22; and

disconnecting the instrument object from the control instrument in response to a
close function call (it is the end of function call).

Brumley does not explicitly teach the DAQ device is a control instrument.
However, Brumley teaches the hardware interface comprising VXI (VME extension for
instruments, GPIB, col. 1 lines 35 – 42).

Mondrik teaches the DAQ device is an instrument controlled by a user
application (instrument, col. 1 lines 55 – 65 and col. 2 lines 15 lines 40 and col. col. 11
lines 65 – col. 12 lines 15).

It would have been obvious to one of ordinary skill in the art at the time the
invention to combine the teaching of Brumley and Mondrik's system because Mondrik's
instrument is also a hardware device and they have same structure running on the
same environment.

43. **As to claim 54**, it is the system claim of claim 1. See rejection for claim 1 above.

44. **As to claim 55**, it is the product claim of claim 1. See rejection for claim 1 above.

45. **Claims 10, 13, 21, 36 – 39, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brumley, US patent no. 5,926,775 in view of Mondrik, US patent no. 5,627,998, and further in view of Bryant, US patent no. 5,764,546.**

46. **As to claim 10**, Brumley teaches that each channel is associated with respect to the DAQ device (col. 6 lines 22 – 30).

Brumley and Mondrik do not explicitly teaches the steps comprising of:
changing the configuration of the first communication channel response the interpreter command to change the properties of the first instrument object; and,
changing the configuration channel in response to the interpreter command to change the properties of the second instrument object.

Bryant teaches the step of
changing the configuration of the first communication channel (configuring channels, title and abstract);
changing the configuration of the second communication channel (configuring channels, title and abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Brumley, Mondrik, and Bryant's system because Bryant's channel configuration would provide a suitable communication association with the instrument objects for the interpreter to make calls.

47. **As to claim 13**, Bryant teaches the step of displaying the configuration the channel in response to the interpreter command instrument object (displays various panel in a configuring window to enable the user to easily specify the respective channel configuration, col. 2 lines 45 – 50).

48. **As to claim 21**, Bryant teaches the step of byte swapping (swapping, col. 18 lines 52 – 65).

49. **As to claims 36 - 39**, see rejection for claims 10 - 13 above.

50. **As to claim 47**, see rejection for claim 21 above.

Conclusion

51. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kay et al., US patent no. 6,096,094, demonstrating a method for configuring a data acquisition system.

Hayles et al., US patent no. 6,067,584, demonstrating a method for configuring a method configuring and controlling a data acquisition task.

Wang, US patent no. 6,286,054, demonstrating a method and system for supporting multiple capture devices.

Finch et al., US patent no. 6,704,802, demonstrating a method and system for communication between independent software modules.


52. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong N. Hoang whose telephone number is (703) 605-4239. The examiner can normally be reached on Monday - Friday 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703)305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ph
August 9, 2004


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